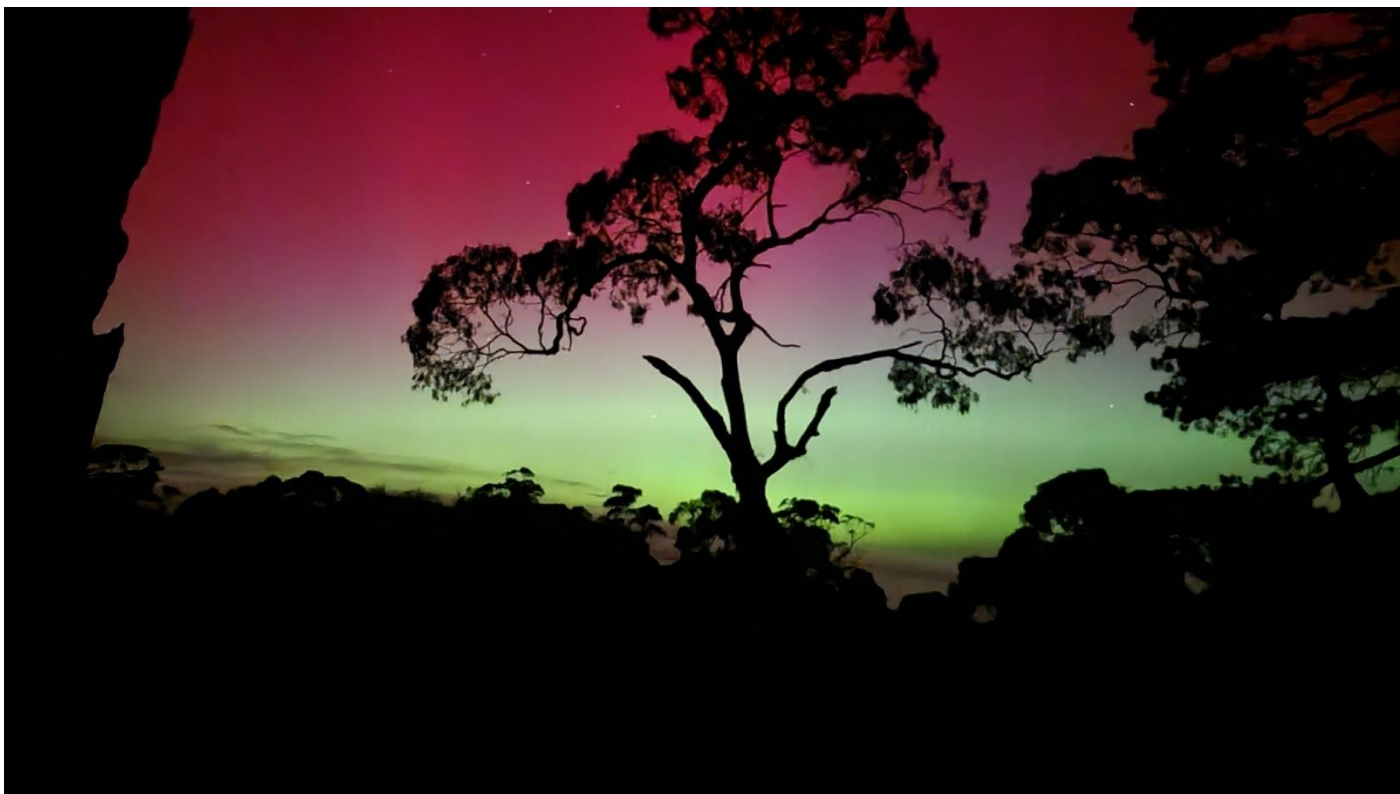
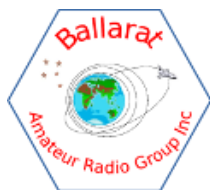




BARG Newsletter

Ballarat Amateur Radio Group Inc. #6953T
April 2024 Monthly Newsletter

Next Meeting General BARG inc
11:00am, Saturday 29th of June 2024
(No May General Meeting)
At the Airport - All Welcome



Contacting us
BARG@BARG.ORG.AU
We're on the web.
www.barg.org.au
https://twitter.com/vk3_barg
<https://www.facebook.com/groups/VK3BML/>



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Frontpage Image Rob VK3PTW

Times and dates of nets as below

Club Nets: VHF NET: Every Tuesday Night at 8 pm on 146.750 MHz - VK3RBA

HF NET: Every Thursday Night at 8 pm on 3.608 MHz - VK3BML

6m NET: Every Tuesday Night at 8:30 pm on 53.650Mhz RX / 52.650Mhz TX - FM
with a 91.5 tone - VK3RWU

LINKED REPEATERS: *The local VK3RBA-70cm repeater on Mt Buninyong is part of a network of linked repeaters covering North-Western Victoria.*

Access details for this repeater have recently changed.

For full details of this linked network and access details see <https://www.qrz.com/lookup/vk3rba>

You can listen to the system live <http://vk3rba.dyndns.org:441/>

This linked system may be accessed via IRLP node 9503.

Note:

There will be NO MAY 2024 GENERAL MEETING

The Next BARG General Meeting
11:00am, Saturday 29th of June 2024

The Next BARG Construction Day
1:00pm, Saturday 1st of June 2024

The George Fowler Auction
Sunday 26th May



BARG inc. OFFICE BEARERS

President	Ben Daniel VK3NRD	Ordinary Member	Tom George VK3DMK
Vice President	Colin Consiglio VK3NCC	Ordinary Member	Ian Fairweather VK3YFD
Secretary	Peter Westgarth VK3APW	Ordinary Member	Doug Ellery VK3DRE
Treasurer	Chris Huggins VK3QY	Ordinary Member	David Martin VK3KQT
Ordinary Member	Craig Cook VK3KG	Ordinary Member	Mal White VK3OAK
Ordinary Member	Lachlan Macdonald VK3ALM		

THE GEORGE FOWLER MEMORIAL **AUCTION**



Sunday 26th May 2024 BARG CLUB ROOMS
BALLARAT AIRPORT

There will be a BBQ and viewing from 11am.

For more information: BARG@BARG.ORG.AU

SERG Convention 2024

The tradition continues, the Australian Fox Hunting championships will be held in Mount Gambier on the King's Birthday weekend 8th and 9th June. It's time to brush off the fox hunting gear, fine tune the pre-amps and check the antennas.

What devious and car swallowing locations will be used by the foxes in 2024.

The convention will be held on Sunday 9th only and topped off by the famous convention dinner in the evening.

See you there.

For any inquiries contact: sergconvention@gmail.com



VHF and Above for May 2024

Of interest this month has been the 6m and 2m contact made due to the AURORA that occurred over the weekend 11th and 12th of May. With stations all beaming South and utilising digital modes as well as SSB and CW contacts were made between VK# to VK7, VK2, VK5 and between VK3 and VK7 to ZL

A couple of members took part namely VK3ZAZ/OTR and VK3AXH on the 2m and 6m bands. Most contacts were completed using digital mode from the WSJT programs mainly Q65C at 15 second intervals for transmit and receive.

Some attempts were made to communicate using both SSB and CW but were quite difficult due to the spreading of the signal caused by the type of propagation medium.

This type of communication only occurs when an AURORA occurs which in our case it not too often but is quite interesting and challenging but exciting when it occurs.

VK3OTR had contacts into VK3, VK7, VK2, VK5 on both 2m and 6m and VK3AXH had contacts into VK3, VK7 on 2m and copied activity on 6m as well.

VK3AXH was able to clearly see the red glow in the southern sky. Below is an image that was taken at my daughter's place at Scarsdale which was quite spectacular.



73 de VK3AXH

The CME and 6M Auroral Propagation

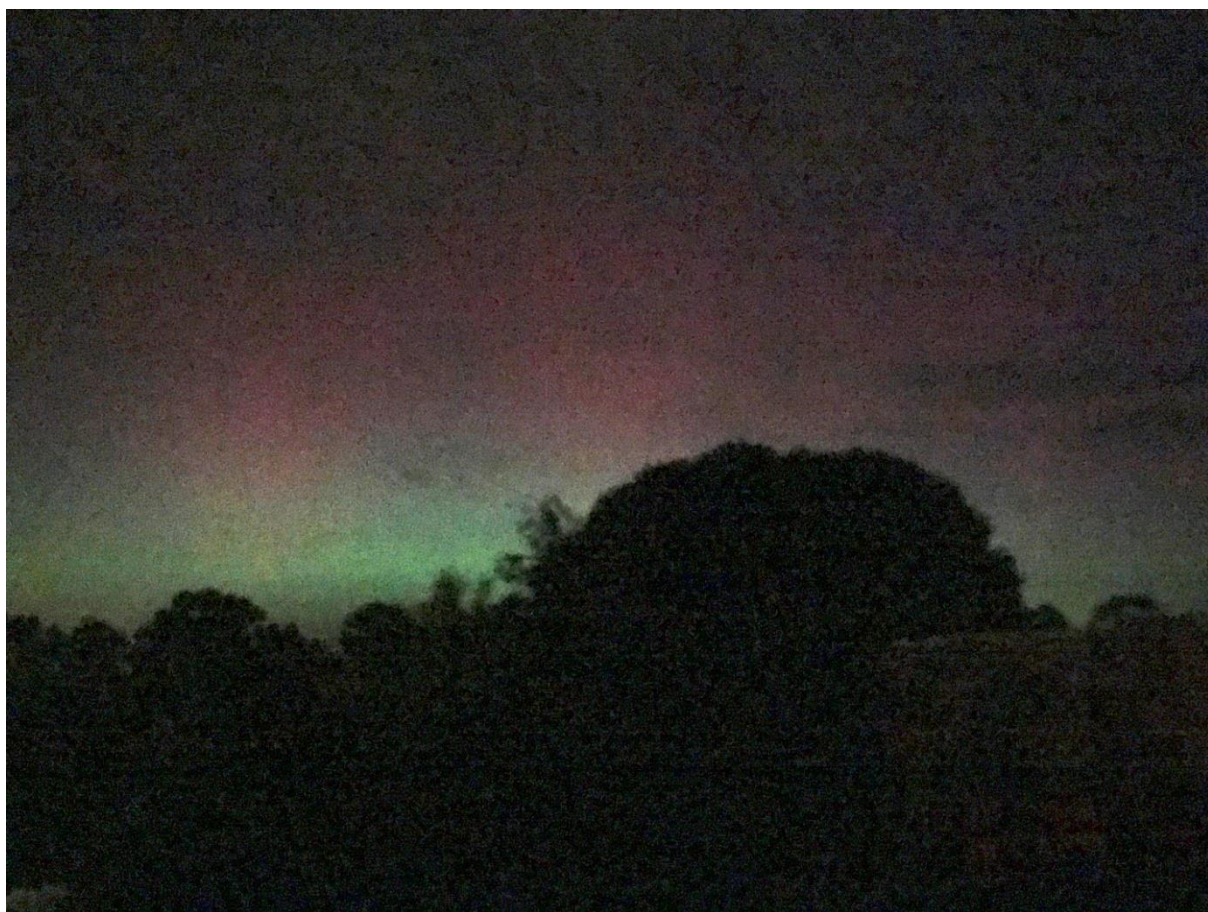
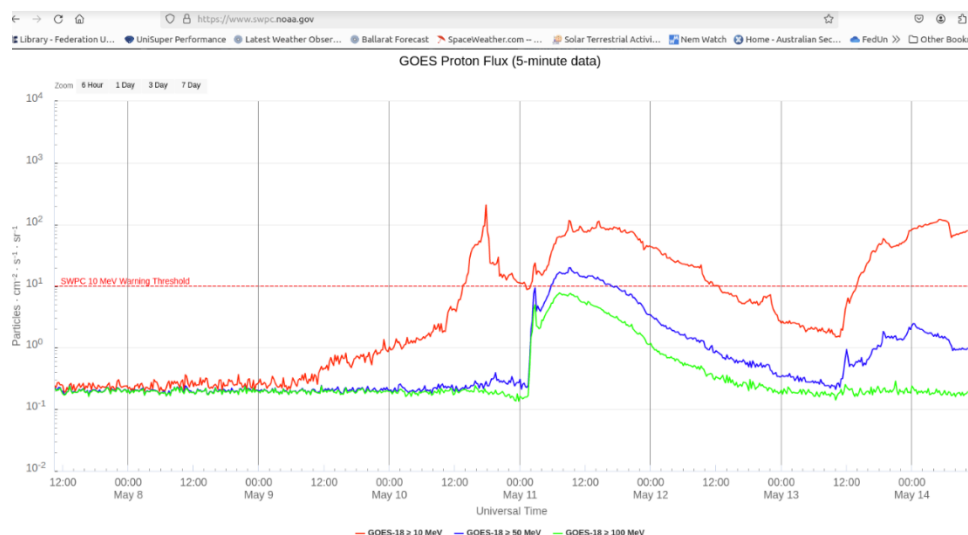
Contributor Paul VK3TXR

With the past weeks CME, Paul reports on his 6m activity.

We are approaching the peak of the current sunspot cycle, and one-night last week I was on the lookout to see if I could see the aurora in the Ballarat sky. I did get to see it for the first time in my life, it was not bright, but it was visible.

The high-energy proton flux (green line) is a good indicator of "something happening" from data from NOAA satellites.

<https://www.swpc.noaa.gov>



An enhanced image taken from Paul's phone camera.

My 6m antenna is a Cushcraft A505S, 5 elements 6m beam (10.5 dBi), Yaesu rotator mounted on my roof, approximately height 7m. Tx FT-2000, I use 10W for 6m WSPR. Lead-in LL-400. QTH is in suburban Mount Clear, with noise from local Solar PV systems. Will upgrade to a 6-element beam when I get around to it. I am looking forward to the next solar flare.

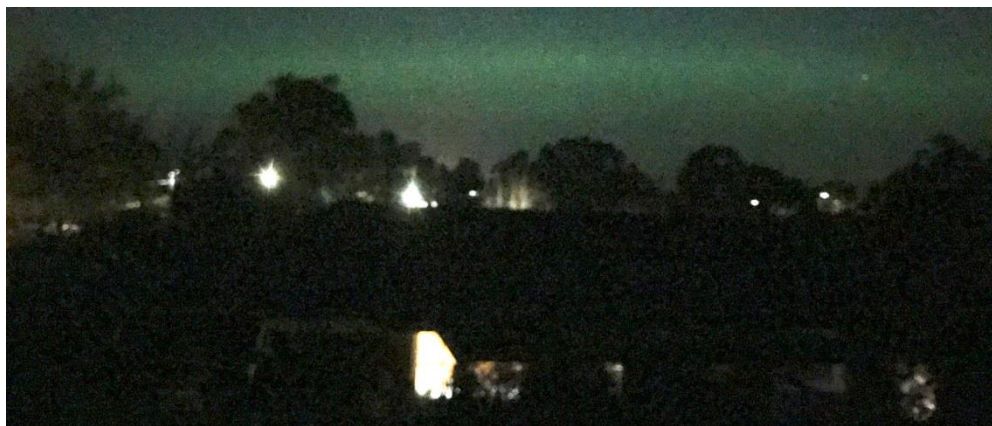
My beam was pointing 50 degrees (NE) during the solar flare. WSPR is a tool for checking antennas and propagation, so no concept of working a station.

WSPR stations that I heard:

Timestamp	Call	MHz	SNR	Drift	Grid	Pwr	Reporter	RGrid	km	az	Mode	# Spots
2024-05-16 05:56	VK3RMV	50.294542	-22	0	QF12ah	20	VK3TXR	QF12wj	257	93	W-2	4
2024-05-16 01:32	VK3OTR	50.294541	-16	0	QF02wh	5	VK3TXR	QF12wj	176	88	W-2	9
2024-05-15 23:30	VK1KW	50.294502	-18	0	QF44mt	100	VK3TXR	QF12wj	535	238	W-2	5
2024-05-15 03:46	VK3MAP	50.294605	-29	0	QF21sk	20	VK3TXR	QF12wj	181	306	W-2	1
2024-05-13 15:54	VK3DXE	50.294500	-22	1	QF21nv	20	VK3TXR	QF12wj	123	296	W-2	1
2024-05-13 14:58	VK2KCM	50.294541	-13	0	QG60mb	5	VK3TXR	QF12wj	1201	222	W-2	1
2024-05-13 12:10	VK2XDG	50.294528	-13	0	QF56mf	50	VK3TXR	QF12wj	775	235	W-2	2
2024-05-13 12:08	VK2HC	50.294515	-25	1	QF56me	20	VK3TXR	QF12wj	772	235	W-2	1
2024-05-11 07:38	VK3AMW	50.294535	-23	2	QF22ir	5	VK3TXR	QF12wj	82	243	W-2	23
2024-05-11 04:56	VK2FAB	50.294541	-2	2	QF22ig	5	VK3TXR	QF12wj	75	280	W-2	1

Stations that heard my WSPR signal:

Timestamp	Call	MHz	SNR	Drift	Grid	Pwr	Reporter	RGrid	km	az	Mode	# Spots
2024-05-18 21:08	VK3TXR	50.294459	-7	4	QF12wj	10	VK2MAX	QF68jv	1091	51	W-2	84
2024-05-18 17:04	VK3TXR	50.294529	-29	1	QF12wj	10	VK5PJ	PF95mk	550	306	W-2	14
2024-05-18 09:54	VK3TXR	50.294556	+13	2	QF12wj	10	VK3JF	QF22bj	22	90	W-2	6
2024-05-18 07:10	VK3TXR	50.294451	-18	4	QF12wj	10	VK2XDG	QF56mf	775	59	W-2	5
2024-05-18 07:10	VK3TXR	50.294456	-14	1	QF12wj	10	VK2IJM	QF56ni	789	58	W-2	7
2024-05-18 07:10	VK3TXR	50.294487	-16	1	QF12wj	10	VK2HC	QF56me	772	59	W-2	2
2024-05-17 23:06	VK3TXR	50.294460	-18	2	QF12wj	10	VK3RMV	QF12ah	176	266	W-2	93
2024-05-17 01:44	VK3TXR	50.294464	-15	2	QF12wj	10	VK3OTR	QF02wh	176	266	W-2	9
2024-05-13 15:36	VK3TXR	50.294496	-13	1	QF12wj	10	VK4ALF	QG63lk	1495	37	W-2	4
2024-05-13 15:08	VK3TXR	50.294467	-13	4	QF12wj	10	VK2KCM	QG60mb	1201	47	W-2	11
2024-05-13 12:12	VK3TXR	50.294503	-16	0	QF12wj	10	VK2DLR	QG61qe	1316	45	W-2	2
2024-05-11 06:48	VK3TXR	50.294456	-21	3	QF12wj	10	VK3AMW	QF22ir	82	64	W-2	17



73's Paul VK3TXR

NOTICE OF BARG inc ANNUAL GENERAL MEETING

**Notice is hereby given.
of the
Ballarat Amateur Radio Group Annual
General Meeting.
Saturday 24th of August 2024 at 11:00am
with BBQ lunch to follow.**



Bunnings Sausage Sizzle

BARG will hold another sausage sizzle on Sunday June 23rd, Bunnings Delacombe.

We need helpers to commit a few hours on the day.

The more we get to help, the less time everyone needs to participate.

If people can add into the diary, it will be appreciated.

To register your help on the day, let us know here;

https://docs.google.com/forms/d/e/1FAIpQLSe4b0mTDBps3ZnSV0wwEM1xYfrRQLg_nj1VUTZCvfp0h9AuuAg/viewform

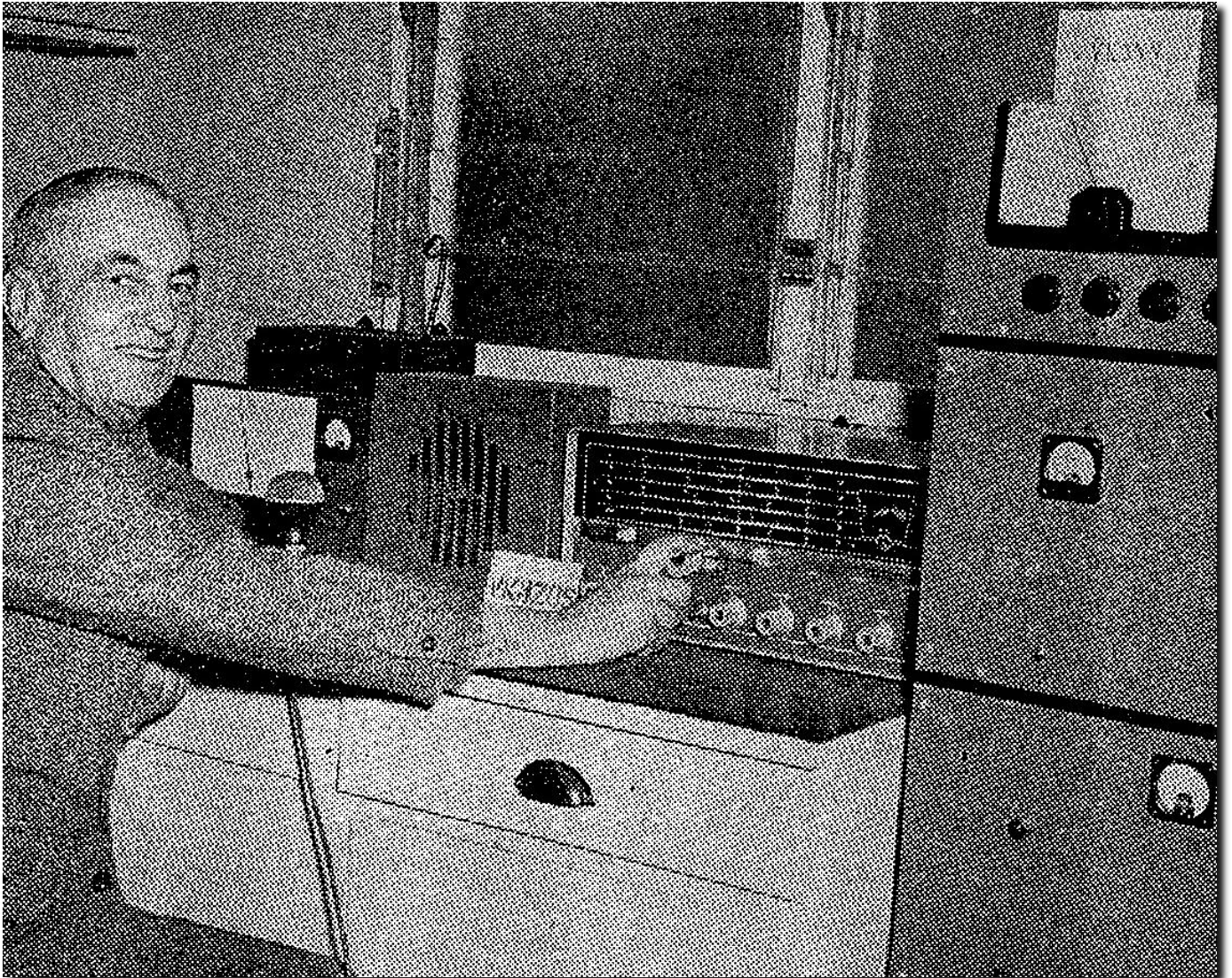


Amateur Radio on the Edge of the Big Desert.

Contributor Gary VK3NN

In August 1965 an article in The Weekly Times appeared, about a Yanac farmer, Mr. Herbert Brown, VK3NN.

This was Gary VK3NN's father, and they were located on a farm 32kms to the Northwest of Nhill.



It was about Gary's father and the amateur radio station on their wheat and sheep farm.

Gary's father obtained his amateur radio license in 1926 with VK3NN and Gary in 1963 with VK3ZOS.

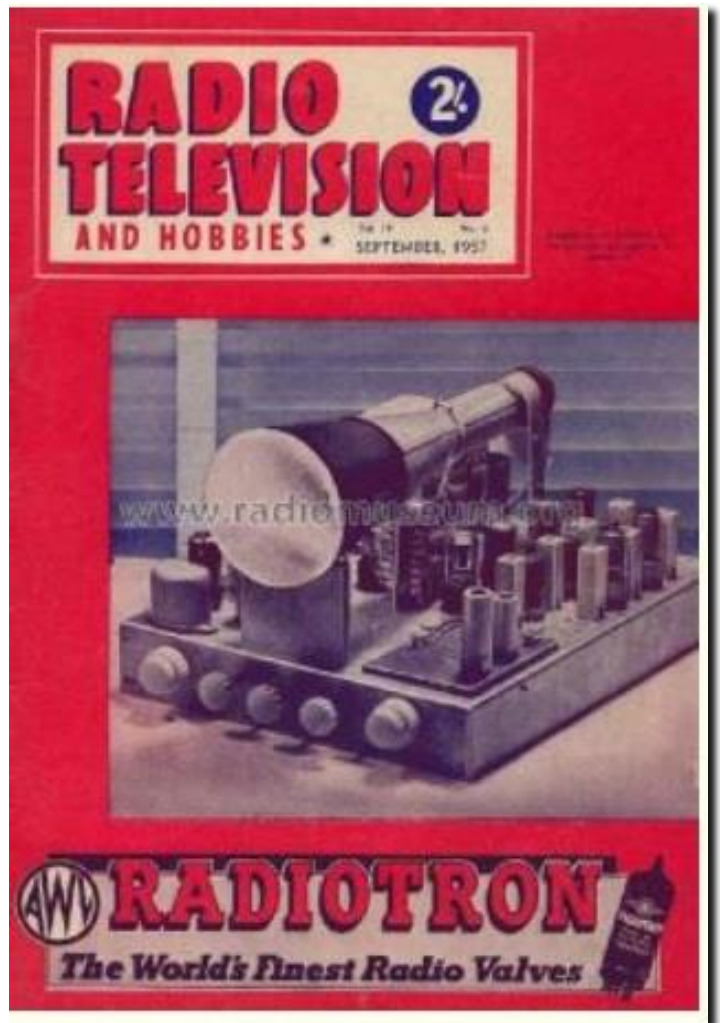
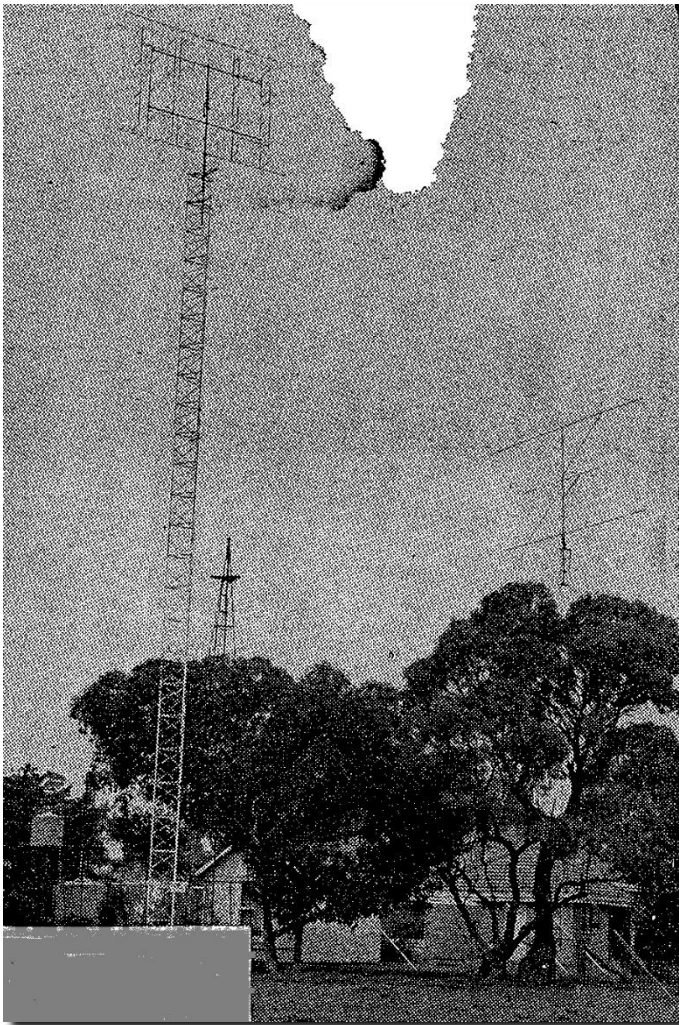
1926 making VK3NN one of the earliest amateurs in the country, attracted to the growing hobby of amateur radio.

Gary in 1957 constructed the 5" television that appeared in 1957 Television and Hobbies in September and following months.

Reception was via a 65ft tower with a homebrew 32 element phased array for obtaining a signal from Adelaide TV stations.

The power for the household was a 4.5kW auto start diesel generator.

Amateur antennas consisted of two long Yagi's spaced two wavelengths apart with a 6M beam in the middle.



Lego Enters the Retro Radio Field



Unfortunately, it apparently does not receive any RF stations.

LEGO Icons 10334: Retro Radio with Soundbrick.

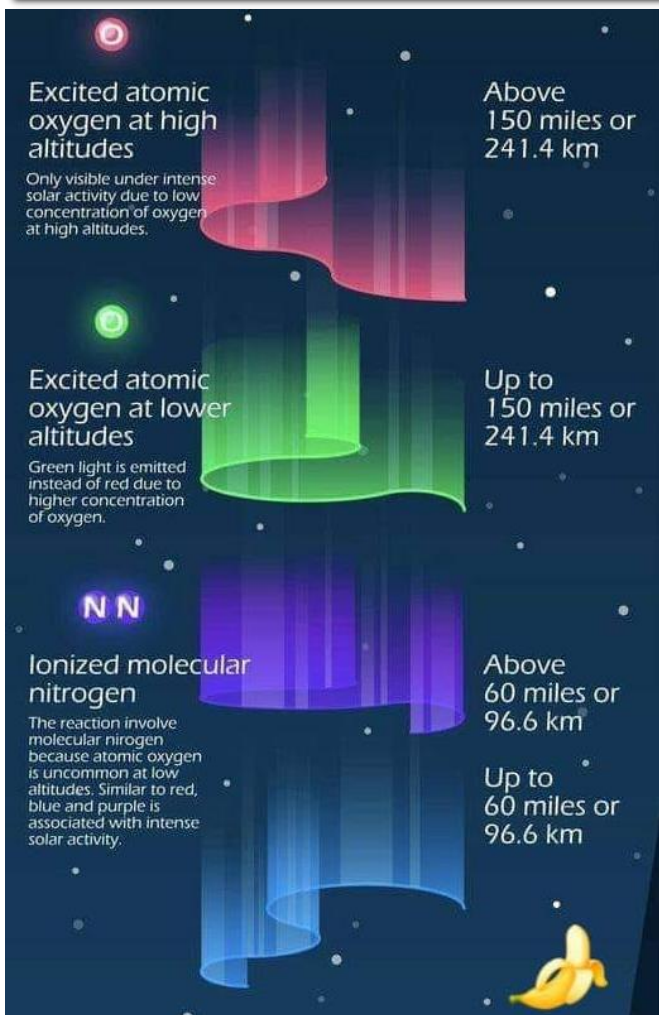
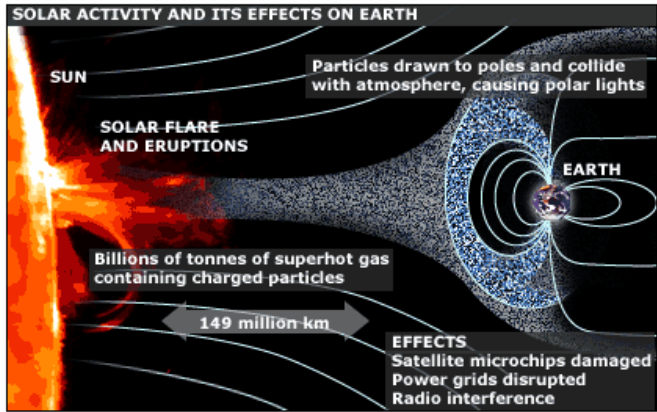
To be released in June 2024.

<https://falconbricks.com/news/lego-10334-retro-radio/>

The May 2024 CME. What is it?

As most amateurs would know by now, the earth was bathed in the result of a CME in the middle of this month.

The earth happened to be facing the side of the sun where giant sunspot AR3664 had occurred, producing a CME.



A CME is a Coronal Mass Ejection, they are large expulsions of plasma and magnetic field from the Sun's corona. They can eject billions of tons of coronal material and carry an embedded magnetic field (frozen in flux) that is stronger than the background solar wind interplanetary magnetic field (IMF) strength. CMEs travel outward from the Sun at speeds ranging from slower than 250 kilometres per second (km/s) to as fast as near 3000 km/s. The fastest Earth-directed CMEs can reach our planet in as little as 15-18 hours. Slower CMEs can take several days to arrive. They expand in size as they propagate away from the Sun and larger CMEs can reach a size comprising nearly a quarter of the space between Earth and the Sun by the time it reaches our planet.

The CME's become caught in the earth's magnetic field and plasma is drawn down into the earth's atmosphere, oxygen and nitrogen atoms are ionised and produce the Aurora Australis that we have been seeing this month.

The intensity of the CME showing up as the brightness and latitudes that the Aurora has been observed.

The colour of the lights helps to identify the element and altitude that the ionisation is taking place.

<https://www.swpc.noaa.gov/phenomena/coronal-mass-ejections>

Some Aurora Australis Images from our Club Members.

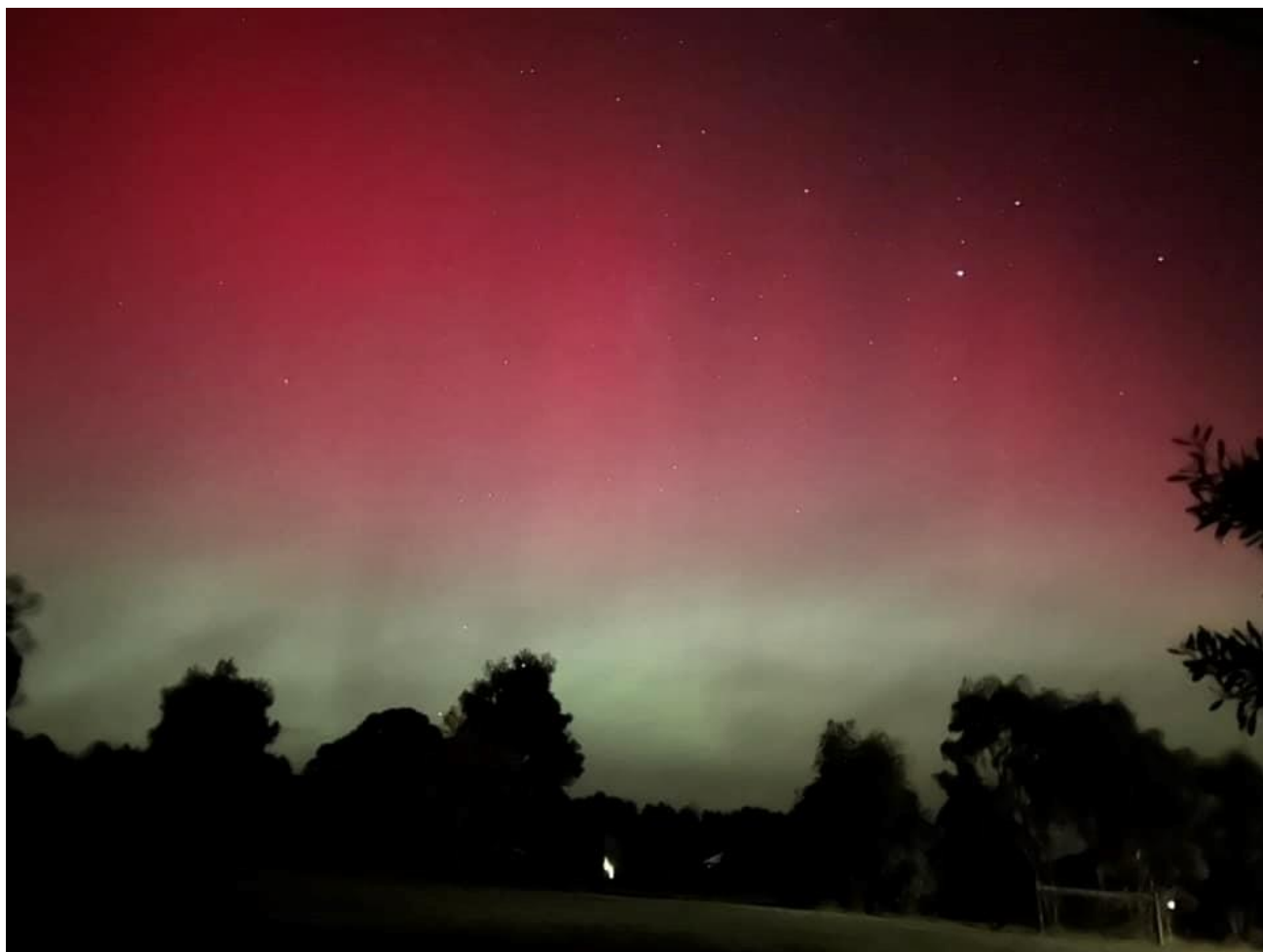


Photo. Andy VK3TOT at Gordon



Photo. Rob VK3PTW Ballarat East

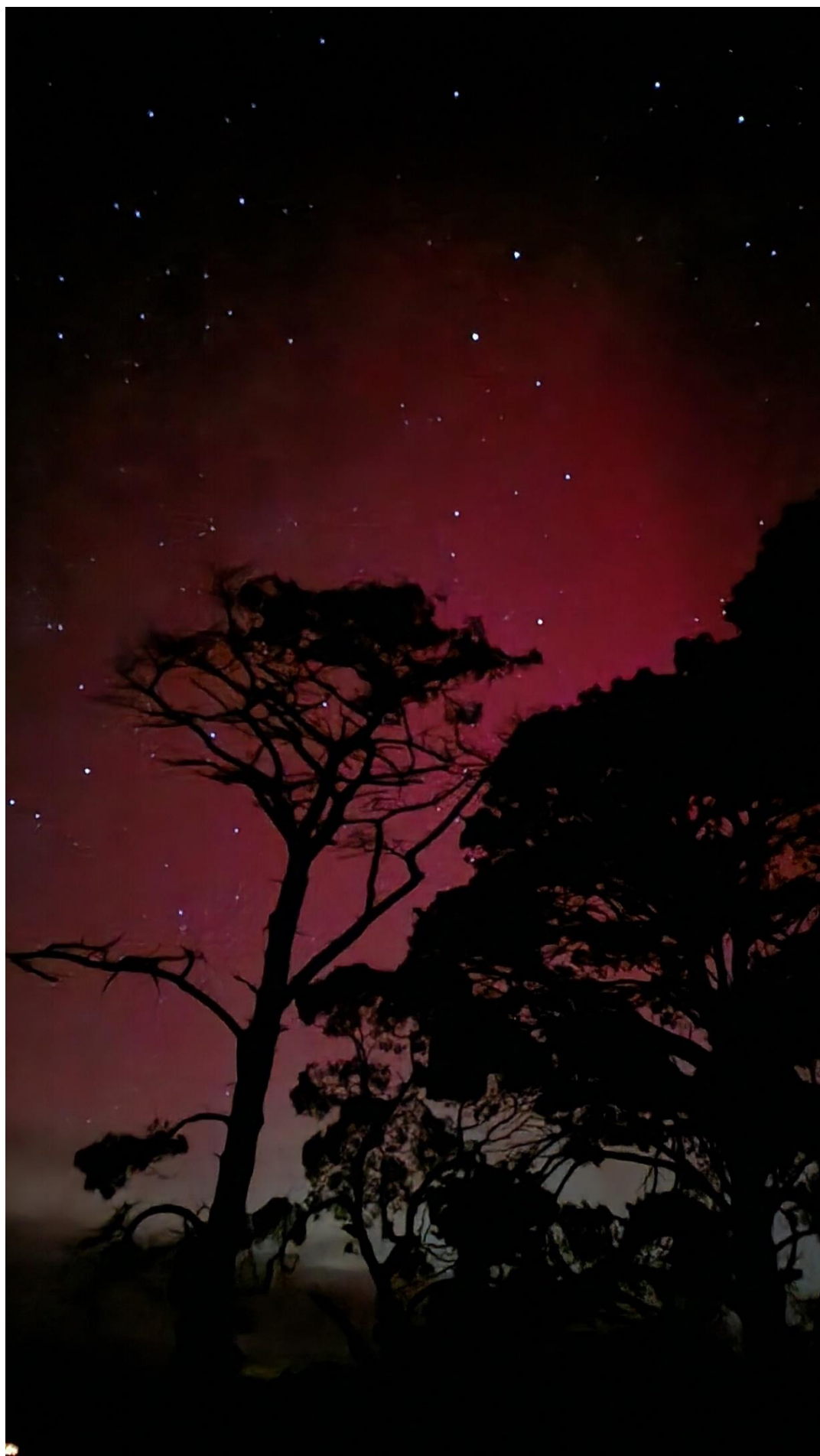


Photo. Rob VK3PTW Birdwood Park, Buninyong

BARG Coffee Mornings



Come out for a chat, coffee, snack, and solve the world's problems, all in the morning.

Every Thursday Morning at 10:00 am

Food Seduction on Doveton

524 Doveton St Nth

Soldiers Hill

(The old Gove Bike Shop)

A Quick Update Regarding Recent Fault Finding & Upgrades at VK3RBA Mt Buninyong.

On Friday, 17th May 2024, Tim VK3TIM and Shaun VK3KK spent the day fault finding & diagnosing the ongoing issues with the RBA 2m repeater. It was eventually tracked down to a radio that was in standby mode from another agency, that mainly operates during summer. It has since been isolated and Tim has developed a solution to this to suppress the inter-mod issue in future.

On the following Saturday, Tim VK3TIM with the assistance of Shaun VK3KK, Tony VK3UBO and Nik VK3BA spent most of the day up there again, replacing a waterlogged feeder, removed any redundant steelwork, rusty bolts, etc, replaced an antenna, removed a faulty antenna, re-arranged part of the filtering chain, installed some new internal feedlines between racks, replaced the 23cm repeater with a new Kenwood based 23cm repeater and fixed a fault with the 10m simplex repeater.

There is a slight new noise getting into the 23cm repeater, but it's not dominant and set for further investigation. These things can often work well on the test bench but put them up on a prominent site and new issues can arise.

Tim and Shaun have spent a fair bit of time up there in recent weekends, giving the whole site a makeover. There is still plenty to do, but the 2m, 70cm & 23cm repeaters and link radios are now working very well. Tonight, 18th May 2024, we had a report from Chris VK3AML in East Burwood that he was hearing the 2m repeater at 5x9 +20 and the best he's ever heard this repeater. That's an excellent report and validation of the work carried out over recent times.

Our next main project is to convert the 10m repeater into a duplex device, with large church-organ like cavity filters and crystal filters from California to make this all work and has been an ongoing work in progress by Tim VK3TIM.

I'd also like to acknowledge Andy VK3AS for his generous contribution around many of the improvement costs around the VK3RBA site as well. Thanks, must also go to Amateur Radio Victoria for their assistance with this site.

In the interim for a while, the 2m & 23cm repeaters will often be linked together via an IP connection for testing & observation purposes.

We'd like to think that the improved 2m repeater will be a much better experience for everyone in the Ballarat area.

Cheers, Nik Presser VK3BA

BARG Members Club Dining Events Update.

There are two regular monthly social events planned.

The ladies' morning coffees are planned for the first Tuesday morning of each month at 10:00am at **Live it Up.**

Greenhill Enterprise Centre, University Drive, Mt Helen

From June 2024, further dining events will be timed for midday on the 3rd Saturday of the month.

To avoid late night Winter trips home.

Notices will be sent out as a reminder to get numbers etc prior to booking each dinner.

Cheers. Ian VK3AXH



John Moyle Memorial Field Day 2024 – VK3BML Results

Six Hour Portable Operation – Multiple Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Locator	Place /Award	Cert.
VK4CNS	Multi	All	HF	118	252	QH23UE	1 /*	23
VK2SNO	Multi	All	HF	105	246	QF43HP	2 /*	24
VK4WID	Multi	All	HF	100	208	QG52XN	3 /*	25
VK3BEZ	Multi	Phone	All	178	646	QF31IS	1 /*	26
VK3ANE	Multi	Phone	All	115	350	QF33IR	2 /*	27
VK2HZ	Multi	Phone	All	129	262	QF56FG	3 /*	28
VK7CMS	Multi	Phone	All	82	246	QE36PX	4 /*	29
VK3BML	Multi	Phone	All	101	202	QF12WI	5 /*	30
VK2DEK	Multi	Phone	All	98	200	QF55FQ	6 /*	31
VK4WIE	Multi	Phone	VHF	53	631	QG62MK	1 /*	32
VL4C	Multi	Phone	HF	252	504	QG62LU	1 /*	33
VK4B	Multi	Phone	HF	248	494	QGP2PK	2 /*	34
VJ2P	Multi	Phone	HF	140	280	QF56OS	3 /*	35
VK5ARA	Multi	Phone	HF	116	232	PF94HW	4 /*	36
VK4XQA	Multi	Phone	HF	107	214	QH22RR	5 /*	37
VK8DA	Multi	Phone	HF	90	180	PH57NK	6 /*	38
VK2FRE	Multi	Phone	HF	85	170	QF68GB	7 /*	39
VK6AHR	Multi	Phone	HF	81	162	OF87FX	8 /*	40
VK6XL	Multi	Phone	HF	77	154	OF77XB	9 /*	41
VK4BA	Multi	Phone	HF	76	152	QG62NN	10 /*	42
VK2MB	Multi	Phone	HF	74	148	QF55JB	11 /*	43

/* Certificate Awarded

Two elderly women, Marie & Edith, were driving. Neither could see over the dashboard. As they were cruising along, they came to an intersection. The stoplight was red but they just went on through.

Edith in the passenger seat thought to herself: "I must be losing it, I could have sworn we just went through a red light."

After a few more minutes they came to another intersection and the light was red again and again they went right through. This time Edith was almost sure that the light had been red but was really concerned that she was losing it.

She was getting nervous and decided to pay very close attention to the road and the next intersection to see what was going on. At the next intersection, sure enough, the light was definitely red and they went right through.

She turned to Marie and said: "Marie! Did you know we just ran through three red lights in a row! You could have killed us!"

Marie turned to her and said: "Oh, am I driving?"

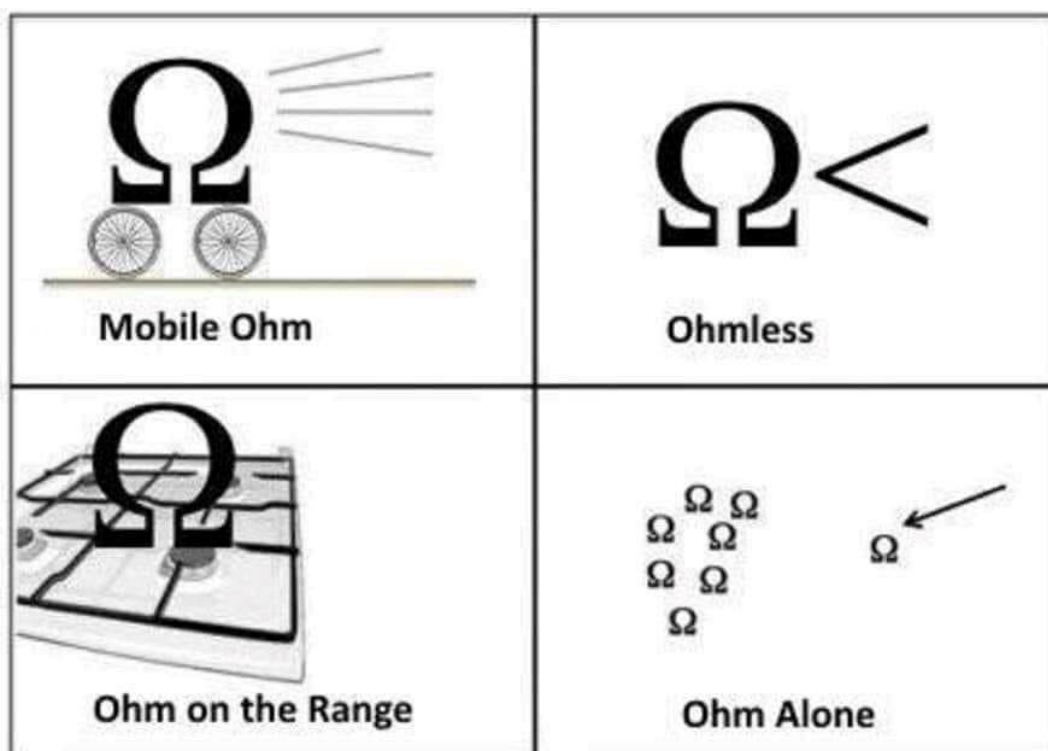
Cheers Rick VK3FIVE

FOR SALE - Yaesu FT2DR Handheld

Yaesu FT2DR 144/430Mhz Digital/Analog Transceiver. As new condition in original box with all original accessories. Just not being used. Able to transfer RT Systems software if desired. Can deliver within reasonable distance.

Currently on VKClassifieds for \$350 but as a newsletter special only \$300 to readers of this fine publication.

Contact Rob vk3ptw@wia.org.au



FOR SALE - 3 Section Lattice Mast 80feet

If you are in the market for a mast this may be for you.

It is a 3-section lattice design with a further 20ft pole making around 80ft tall. It is galvanised and in good condition.

It would require guys as it is but could be modified to be like a Nally Mast without too much work. It would also be feasible to use the bottom 2 sections and sell off the upper section and pipe to offset the overall price.

The price is \$600, not negotiable, and would be delivered to the BARG club rooms for pick-up. If there is no interest from members it will be advertised at the George Fowler Auction. Any questions please send me a message.

Contact Ian VK3AXH . vk3axh@gmail.com





Are you interested in becoming an amateur radio operator?

If you are interested in WIA membership, the Amateur Radio Magazine and what is going on in the amateur radio world, then check out the site at;

<https://www.wia.org.au/>

Magazine Reviews

Silicon Chip May 2024 Review

- P14 Computerised Traffic Management. Looking at the modern solution to traffic management, not just pedestrian crossing, but overall traffic flow on highways and CBD streets. The logic of traffic light control and electronics involved on the ground to vast network control and vehicle communications available now and in the future.
- P33 Build your own compact Frequency Divider. A single small PCB designed to convert 10MHz standard frequency to 1MHz and 1Hz squarewave signals. Uses some basic 74HC ICs and operating on USB 5V power. Simple setup and performance checks get you a very handy reference device.
- P40 WiFi DDS Function Generator. Part 1. Designed with WiFi and touch screen display control, the generator can output seven waveform options with up to 11.5V p-p output through 2 output ports. 0.01Hz to 50KHz Sinewave and 0.01Hz to 20KHz Square, Triangle and Pulse outputs. Uses a Raspberry Pi Pico W and 3.5" TFT module and PCM5102 DAC module.
- P56 The Formula 1 Power Unit. Modern F1 engines have always been in the hi-tech end of engineering technology, for many years hybrid electric drive has been included in the mix to get the most efficient high speed vehicles to run around a track. This article describes the many types and



combinations of electric motors and generators that combined with a turbo powered internal combustion engine produce some amazing performing race cars.

P60 Mini Projects #001. Symbol Keyboard. Using Arduino Leonardo and 2.8" touchscreen to make non-standard keyboard characters easily available on separate "keyboard".



P62 Mini Projects #003. Thermal Fan Control. A simple temperature control PCB that uses a thermistor to control the response of a thermal fan.

P65 Wired Infrared Remote Extender. Using a few components, a method to let you use your IR Controller normally "out of range" to your TV, sound system etc.



P70 Fan Speed Controller. A controller for 240Vac with a MOSFET switch, incorporating current limiting. Construction details along with safety considerations when assembling and layout and integrated thermal switch.

P80 Skill Tester 9000. Part 2. Continuation of a retro game, with different skill levels and responses to input conditions.

P86 Serviceman's Log. Subwoofer Fix. Tracking down replacement parts. Revitalising a Mini Scamp Computer. Repairing an MTM 4400i inverter generator.

P92 Circuit Notebook, DSB/AM phase shift modulator. Replacement Switchmode power supply for an oscilloscope.



P96 Vintage Oscilloscope. A scope designed by Jim Rowe in Radio Television and Hobbies, June to August 1963. Restoration and description of operation.

QST June 2024 Review

P9 Second Century. CEO David NA2AA. Reviews the up and coming events and competitions in the ARRL schedule.

P24 Correspondence. Ham Wayback Machine, Grounding Tip, Digital Edition of QST.

P30 Simple 2M and 6M combined Yagi. Easy construction method for a very versatile antenna with boom mounting method along with design theory. Good SWR across the relevant bands.



P34 A Simple and Inexpensive Keyer for Morse Keyboard Use. Using a Raspberry Pi Pico, RP2040. Very few parts, featuring storage of messages in a compact and economical form.



P37 SWR Applications in Lines with Resistive Loads. Theory and mathematics used to calculate and some opinions on commercial SWR meters.

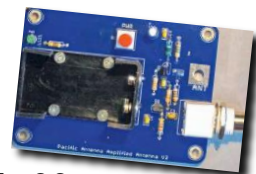
P41 Product Review. Icom ID-50A Dual Band FM/Digital Handheld Transceiver. D-STAR and FM based handheld, 8.4V attached battery or 13.8V external power. 5Watts output and variable down to about 100mW on 2M and 70CM.



P46 Product Review. GQ Electronics EMF-390 Multi-Field, Multi-Function EMF Meter and RF Spectrum Power Analyser. For testing RF levels, EMF

and ELF radiation. Audible settable alarm levels for real-time monitoring that senses in all three axes with monochrome LCD screen.

- P51 Product Review. Pacific Antenna Active Antenna Kit. A kit comprising of 20 parts with 9V battery holder, this untuned, broadband amplifier is useful from 100kHz to 200MHz, with some mixed results.



- P53 Ask Dave. Antenna and Feed-Line Options. Feeding a Mosley Ta-33. Apartment Antenna Options. Coax can seem like Magic.

- P55 Field Day – Safety First. Planning for safety on a field day, emergency services, fire risk, tripping hazards, keeping cool and or warm. A discussion on what is safe and unsafe on a club outing or contest. (Sort of thing we, BARG, need to think about.)



- P58 Five Lessons Learned from Low-Power SSB Field Day Operation. Observations from a QRP outing, from power level, patience, listening skills, taking a jump at the right opportunity in a pileup, timing of operation.

- P60 Happenings. FCC to Require Two-Factor Authentication for CORES Users. National Hurricane Conference. Ham radio-active during Eclipse. New England Division to Celebrate 100th anniversary.

- P63 Amateur Radio World. Emergency Comms tests Bosnia and Herzegovina. New Beacon for Central America. Long live the King. Earthquake Tests Peru's New EmComm Director. Radio Society of Sri Lanka Welcomes Scouts. Ofcom Decisions Announced. (Similar situation to ACMA and VK amateurs)

- P65 An In-Depth Look at Incident Action Plans.

- P69 Understanding the Field Day GOTA Station.

- P70 Improve Your Field Day Operations with Band Planning.

- P72 Field Day Media Coverage.

- P76 Choose Your Field Day Focus.

- P86 Club Station. Four Ways Clubs Can Make Field Day Their Own.

- P88 Coastal Waves & Wires – Low-Power Operating at the Beach. Has some VK and ZL stations mentioned in a VK3YE type QRP operation.

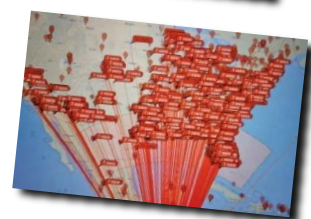


- P90 How's DX? Temotu Province – H40WA 2024 Dxpediton Recap.

- P92 CME Sparks Strongest Geomagnetic Storm of Solar Cycle 25. Reports from around the world on propagation or the lack of it on amateur bands.

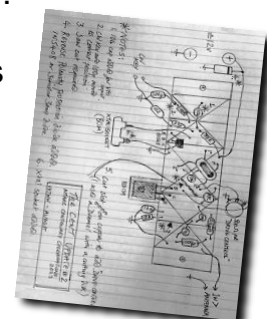
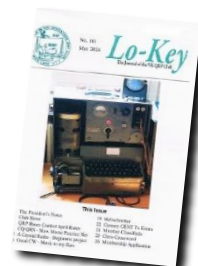
- P100 Classic Radio. The Ins and Outs of HealthKit's Mohican Receiver. A look at the overall design and specifications.

- P102 100, 50, and 25 years ago.



Lo-Key 161 March 2024 Review

- P3 Lo-Tone. Terry VK2KTJ. Contributions needed for next issue.
- P4 The President's Notes. Trevor VK5ATO. Contests, key restorations and magazines.
- P6 Club News. Kevin VK5AKZ. Past issues, Lo-Key index, feedback about "digital copy", check email addresses. New members.
- P8 QRP Hours Contest April 80m. Garry VK2GAZ. Details of rules and logging.
- P11 CQ QRS – Tuesday Slow CW Practice net. Mark VK2KI/VK6QI. Tuesday night CW Practice transmission information.
- P12 A Crystal Radio – a good beginner's project. Jens VK4PE. A fun project to build a simple crystal radio.
- P16 Good CW: Music To My Ears! David VK5BUG. View on CW practices and sending methods, including "bugs" and straight keys.
- P19 Hellschreiber – a digital mode for CW transceivers. Peter VK3TPM. Operating and equipment needed to operate this interesting mode.
- P22 Century CENT TX Errata. Nic VK7WW. AN update on details of this simple Tx.
- P24 Member Classifieds
- P25 Chris – Crossword. Chris VK1CT.



Lo-Key VK QRP Club Nets and Frequencies. Club CW Calling Frequencies;

1.815 3.530 7.028 10.106 14.060 21.060 28.060

The "SSB Natter Net"

The SSB Natter Net is not currently operating, however the same time and frequencies could be good for making contact with other QRP or homebrew stations.

When: Thursday nights at seasonal times (Southern Hemisphere);
 0930 UTC Summer
 1030 UTC Winter

Frequency: 3645 kHz $\pm$ QRM
 If conditions are poor, 7095 $\pm$ QRM may be used.

Power: Any

Application for Membership

Ordinary Membership of the "CW Operators' QRP Club Inc."

(Please print)

First Name:
Surname:
Callsign: *(swl's are welcome)*
Address:
Email Address:

- ☐ I agree to my details being held on the club's data base and my name, callsign, city, and country, being published.
- ☐ The club may send me occasional email about club activity and membership.

Please enclose the annual membership fee:

Australia: AU\$15
Asia-Pacific: AU\$16
Rest-of-World (incl. USA and Europe) DX: AU\$18.

Signature:
Sponsor (if any):
(Insert the sponsor member's name & callsign.)

You will receive a new member's pack, membership number and certificate. Fees are due on 1st Jan. each year. We will adjust the amount on your account in September. A receipt will be given only if you ask for one when making a payment.

Please mail this application to:

Kevin Zietz VK5AKZ,
Treasurer CW Ops QRP Club,
P.O. Box 1018,
Pasadena, SA 5042,
Australia

**Are you doing anything interesting with your shack?
Are you going anywhere to operate your radio gear?
Have you or are you building something that would be of interest to the
Newsletter readers?
Then think about writing about it for your Newsletter.
Very easy to do, ask those that have done it.**

Text can be sent in Word or text or other formats, images sent separately,
jpg, png, even pdf.

Send to Tom VK3DMK Newsletter Editor

tomvk3dmdk@gmail.com